AMENDMENTS TO THE CLAIMS

1.-56. (Canceled)

57. (Withdrawn) A method of ameliorating an effect of heparin or low molecular weight heparin in a mammal, comprising administering to said mammal at least a first pharmaceutical composition comprising an amount of at least a first purified protamine effective to ameliorate an effect of heparin or low molecular weight heparin in said mammal; wherein said purified protamine is bioactive, has a molecular weight of between about 400 and about 2500 Daltons and has reduced immunoresponsiveness or toxicity compared to native protamine.

58. (Withdrawn) A method for treating or preventing undue or excessive bleeding in a mammal, comprising administering to a mammal having or at risk for developing excessive bleeding at least a first pharmaceutical composition comprising an amount of at least a first purified protamine effective to treat or prevent undue or excessive bleeding in said mammal; wherein said purified protamine is bioactive, has a molecular weight of between about 400 and about 2500 Daltons and has reduced immunoresponsiveness or toxicity compared to native protamine.

59.-75. (Canceled)

76. (New) A method of inactivating heparin or low molecular weight heparin, comprising contacting heparin or low molecular weight heparin with a composition comprising an amount of at least a purified protamine fragment effective to inactivate heparin or low molecular weight heparin; wherein said purified protamine fragment

is a protease cleavage product,

comprises a minimum of six arginine amino acid residues,

is bioactive,

has a molecular weight of between about 400 and about 2500 Daltons as determined by gel filtration and

has reduced immunoresponsiveness or toxicity compared to native protamine.

77. (New) The method of claim 76, wherein said purified protamine fragment has a molecular weight of between about 400 and about 2000 Daltons.

78 (New) The method of claim 77, wherein said purified protamine fragment has a molecular weight of between about 500 and about 1350 Daltons.

79. (New) The method of claim 77, wherein said purified protamine fragment has a molecular weight of between about 1100 and about 1300 Daltons.

80. (New) The method of claim 76, wherein said heparin or low molecular weight heparin is located within a mammal and said composition is administered to said mammal.

81. (New) The method of claim 80, wherein said mammal exhibits excessive bleeding associated with systemic heparinization.

82. (New) The method of claim 80, wherein said mammal exhibits excessive bleeding associated with extracorporeal blood circulation.

83. (New) The method of claim 80, wherein said mammal exhibits excessive bleeding associated with a disease or disorder.

84. (New) The method of claim 80, wherein said mammal exhibits excessive bleeding associated with a trauma or surgery.

85. (New) The method of claim 80 further comprising administering a coagulant to said mammal.

86. (New) The method of claim 80, wherein said mammal has or is at risk for developing excessive bleeding.

87. (New) The method claim 77, wherein said purified protamine fragment has a molecular weight of about 1300 Daltons.

88. (New) The method of claim 77, wherein said purified protamine fragment has a molecular weight of about 1200 Daltons.

89. (New) The method of claim 76, wherein said composition comprises at least a first and at least a second purified protamine fragment.

90. (New) The method of claim 80, wherein said mammal is a human subject.

91. (New) The method of claim 76, wherein inactivating heparin or low molecular weight heparin treats or prevents undue or excessive bleeding in a mammal.

92. (New) The method of claim 76, wherein the protamine fragment is a protease cleavage product and said protease is selected from the group consisting of thermolysin, ficin, collagenase, kallikrein and proline-specific endopeptidase.

93. (New) The method of claim 76, wherein the protamine fragment is derived from a protamine selected from the group consisting of salmon protamine and clupeine protamine.